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AUGUST 1962



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## SPECIALS!!

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JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA. FOUNDED 1910.

AUGUST 1962  
Vol. 30, No. 8

## Editor:

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OR

Mrs. BELLAIRS, Phone 41-3335, 478 Victoria  
Parade, East Melbourne, C.S., Victoria. Hours  
10 a.m. to 3 p.m. only.

## Publishers:

VICTORIAN DIVISION W.I.A.  
Reg. Office: 52a Franklin St., Melbourne, Vic.

## Printers:

"RICHMOND CHRONICLE." Phone 42-3419.  
Shakespeare Street, Richmond, E.I., Vic.

★

All Correspondence should be forwarded  
to—

THE EDITOR,  
"AMATEUR RADIO,"  
P.O. Box 35,  
EAST MELBOURNE, C.S., VIC.

before the 8th of the month preceding pub-  
lication. Technical articles should preferably  
be typed, double spaced, on one side of the  
paper, signed and numbered. All drawings  
should be large and done in Indian ink.

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Issued monthly on first of month. Sub-  
scription rate in Australia and Overseas is  
24/- a year, in advance (post paid).

Back copies may be available; enquiries to  
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★

## OUR COVER

The Victorian Division of the  
W.I.A. has adapted the technique of  
hidden transmitter hunting to the  
location of meteorological balloons.  
This has proved very reliable and  
has since been adopted by the Mel-  
bourne University. Our photograph  
shows the retrieved balloon and  
radar reflector together with the  
Amateur gear used for the task.

## FEDERAL COMMENT

★

The month of August once more heralds in the popular Remembrance Day Contest. This year, the fifteenth on which it has been held, is ample tribute in itself to the popularity of the event. It is our way of paying annual homage to our comrades who paid the supreme sacrifice during the 1939-45 World War. This latter concept should be our guide in our attitude towards the Contest.

Any contest which extends over many years, as has this R.D. event, tends to lose some of the ideals which inspired its inauguration. Whilst we have endeavoured to remind all entrants, by way of an opening speech by an eminent Australian—this year the Governor of Western Australia, His Excellency Lt. Gen. Sir Charles Gardiner, K.C.M.G., K.C.V.O., K.B.E., C.B.—of the objects of the Contest, the R.D. has of recent years developed into the usual scramble for contacts and in some cases, selfish operating practices and infringements of Regulations.

While our efforts have always been directed towards encouraging active participation by as many Australian Amateurs as possible, it was never envisaged that some operators would be selfish enough to try to destroy the very precepts on which it was based. Had our lost comrades been of this same selfish turn of mind, we may not now be enjoying the freedom and pursuit of our hobby. Their effort was a team effort—let ours be the same.

When you operate later this month in the R.D.—as we hope you all will—think of your mates and that they may wish to make a few R.D. contacts also. Adopt good operating practices, abide by the Regulations and enjoy yourselves; then this Contest will indeed become a Remembrance Day Contest and not a battle for some more wall paper for the shack.

FEDERAL EXECUTIVE, W.I.A.

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job. I personally prefer the second method for achieving better efficiency and better band coverage.

On the subject of bands, let us consider what frequency should a mobile station operate. The 80 mx band, whilst very popular in New Zealand and America, has been totally neglected in Australia. One of the main reasons, although good results can be obtained, is that the antenna efficiency for mobiles on this band is very, very low. The 40 mx band is quite popular in Australia, good mobile contacts being made when band conditions permit with reasonably low power. Here again antenna design is critical and efficiency very low compared to the normal half-wave dipole (approximately 9%). The 20, 15 and 10 mx bands have not been utilised in Australia for fairly obvious reasons, although the 10 mx band could be extremely good during the height of the sunspot cycle or for local contacts if there were sufficient local stations active on this band.

The 6 mx band is not very populated by mobiles but is fast becoming so with efficient whip aerials easily secured; Interstate and DX working possible, subject to conditions, and very reliable short distance working (up to 50 miles) obtainable.

Finally, the 2 mx band, a popular frequency for mobile working, is reliable for short distance working, line of sight distance working and, as provided lately, an occasional possibility of DX or Interstate contacts.

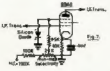
In summation, it would seem that we should consider the use of 7 Mc., 50 Mc. and 144 Mc. The writer's opinion is that the mobile station should, especially if building from scratch, make provision for receiving and transmitting on all three of these bands.

It is suggested that the basic receiver have a frequency coverage of 4 Mc., including 7 Mc., say 6-10 Mc., and have a slow motion dial not exceeding 10-1 unless it has an over-riding fast motion incorporated.

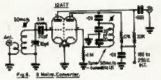
Previous mention has been made of a suitable detector, noise limiter and audio for a mobile receiver, therefore we will restrict ourselves to the consideration of the i.f. amplifier and front-end to be used. Consideration has not been given to the use of transistors or hybrid valves as it is assumed that the transmitter power supply will be also utilised for reception.

Forty metres automatically presupposes for our purposes a high selectivity receiver. Our selectivity must be obtained in the i.f. section at a reasonable cost, therefore it is suggested that we use two stages of i.f. amplification

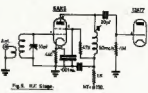
with the first stage utilising back-to-back i.f. transformers, the frequency being 455 kc. By using one r.f. stage, the image rejection will be quite reasonable and enhanced on 7 Mc. by the high Q of the mobile aerial. A suggested circuit is given in Fig. 6. This is not claimed to be the ultimate in receivers, but is capable of giving a good account of itself. Note that your favourite b.f.o. circuit should be added for s.a.b. and c.w. reception, or alternatively you might use the circuit of Fig. 7.



The values given in Fig. 7 should be closely followed, however if the gain is too low with the potentiometer at minimum selectivity, the value of the cathode resistor could be reduced. As you reduce the control to zero (earth end), the stage comes closer to regeneration, finally in the last stages of the control it becomes a b.f.o. pitch control and may be used for the reception of c.w. or s.a.b. quite successfully.



Having achieved reception on 40 metres, let us consider extending the range to 50 and 144 Mc. Several very good converters have been featured in "A.R." and other magazines, so some very simple converters are featured instead to give the d.c. boys an incentive to explore these foreign fields. Fig. 8 is a simple converter for 6 metres capable of reasonable results. If you are more ambitious, the r.f. stage illustrated in Fig. 9 may be added. A good shield across the 6AK5 socket is recommended to tame the r.f. stage. These simple circuits could also be used to get the newcomer started on 144 Mc., but I would strongly recommend that crystal-locked converters be used on both bands. In N.S.W. considerable success has been achieved by the users of the crystal locked converters sponsored by the N.S.W. V.h.f. and T.v. Group and featured in one of the national radio magazines.

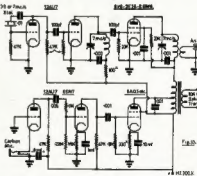


# MOBILE TRANSMITTERS

The transmitter is the problem child amongst the mobile equipment. The transmitter is usually designed around the power supply which itself is dependent on the primary power source. The power available from most supplies is limited, so let us consider what radiated power means in terms of reception at the other Ham's shack.

In theory a signal increase of 3 db. gives about half an S unit increase in reception. A 3 db. change requires the doubling of actual radiated power. For example, a 300 volt 100 mA. power supply could produce a radiated (modulated) carrier of approximately 8 watts. To increase your power to produce half an S unit difference, the minimum signal change that is noticeable at the receiver end, it would be necessary to radiate 16 watts. This means that the primary current drain for a 12 volt system would increase from approximately 5 amperes to approximately 10 amperes. A further 3 db. increase, 32 watts output, would cause a primary drain increase to approximately 20 amperes.

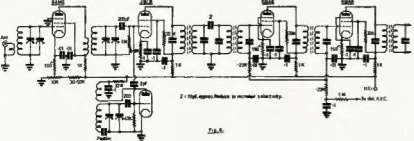
It can be seen that a small increase in signal received is bought very dearly at the mobile transmitter. Therefore we are limited to radiate as much power as our power supply will stand on 7 and 50 Mc., but on 144 Mc. we are saved by the ability to increase our radiated power by the use of a high gain aerial.



# 7 Mc. Transmitter

Two simple transmitters are illustrated in Figs. 10 and 11, giving two approaches to the use of a simple 300 volt 100 mA. power supply. In Fig. 10 the oscillator-driver stage can use 3.5 or 7 Mc. crystals and has an approximate drain of 15 mA. The final plate current is approximately 35 mA. and the preamplifier-modulator 50 mA. With an input of 10.5 watts, an approximate output of 7 watts is obtained, modulated approximately 80%.

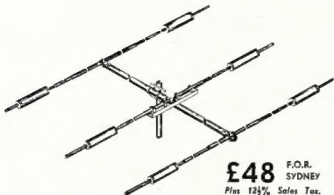
In Fig. 11 gated screen modulation is used, the approximate current drains being: osc.-driver 15 mA., final 70 mA.,





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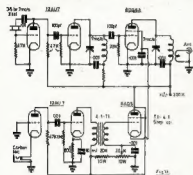
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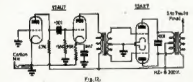
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modulator 15 mA. An input of 21 watts will, with efficiency modulation, give an approximate output of 8 watts nearly fully modulated. To set up the gated screen modulator, start with the screen voltage shown. If this is too low, a controlled carrier effect will be noticed. The antenna coupling should be tightened and grid drive reduced if necessary until the antenna current drops about 15% from maximum value. Once set up to give correct operation, the antenna coupling, etc., can be fixed and left. Ensure that you have upwards modulation or the received signal will not give very good audio recovery.



## Modulation

If space permits and you have the necessary transformers, which are now commercially available, the class B modulator of Fig. 12 could be substituted in Fig. 10 and by changing R1 and R2 to 22K the input could be increased to 12 watts. This would still be within the limits of the power supply but be sure you have a large filter capacitor across the output of your power supply. A 12AX7 valve in class B is capable of delivering 5-7 watts of audio, sufficient to possibly even overmodulate the transmitter in Fig. 10, which leads to a discussion of making the best use of your audio in transmission.

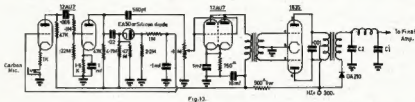


As stated earlier in our discussion of receiver audio amplifiers, to achieve a good communication audio the following must be accomplished: (1) Attenuation below 500 c.p.s.; (2) 6 db. per octave boost from 500 c.p.s. to 2,500 c.p.s.; (3) Attenuation of frequencies above 2,500 c.p.s. This means for normal voice input to the modulator, maximum modulation will be achieved on all frequencies between 500 and 2,500 c.p.s. at once as the average voice drops about 6 db. per octave above 500 c.p.s.

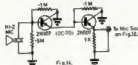
As we use a microphone, especially mobile, we tend to vary the intensity of the voice or the position of the microphone. To combat this we can resort to three tricks—compression, low level clipping, and high level clipping. For simplicity and effectiveness, the author

prefers compression and high level clipping, or a combination of both.

Fig. 13 illustrates a modulator circuit incorporating speech shaping, compression and high level clipping. With an applied voltage of 300 and approximate full signal drain of 50 mA, 12 watts of audio is available. This will modulate fully a 25-watt carrier, or making use of the high level clipper-filter will modulate a much smaller carrier very effectively without sideband splatter. Note that values of components should be strictly adhered to for best results.



The high level filter network values are dependent on the impedance of the final tube being modulated, but L1 could be approximately 0.25 henries, and C1 and C2 approximately 0.01  $\mu$ F. (high voltage rating). C1 and C2 could be varied slightly for best results, but remember that C1 will include any plate by-pass condenser in the modulated final.



By now you will have noticed that all modulator circuits have featured a carbon microphone. This is because there are only two really reliable microphones for mobile operation, the carbon and the dynamic. I strongly disavow the use of disposals carbon microphones as these are unreliable and give bad quality audio. It pays to invest in a new carbon microphone and ensure good quality transmission. For those people who would like to use a high impedance microphone with these circuits, Fig. 14 gives the circuit of a high impedance microphone and transistor matching amplifier, which derives its power from the 12AU7 cathode circuit. Comparable audio power to the carbon microphone is obtained with this circuit.

Should the available power supply be capable of supplying more than 100

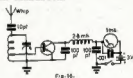
mA., I would suggest the use of the r.f. section of Fig. 11 with standard screen grid circuit (approx. 22K) and the modulator of Fig. 13.

## 6 and 2 Metre Transmitter

Whilst separate transmitters could be built on 6 and 2 metres, I would suggest, especially for the v.h.f. beginner, the combined transmitter of Fig. 15. This circuit is very efficient on 50 Mc., being capable of approximately 6 watts output with 250 volts high tension, but do not expect more than two or three

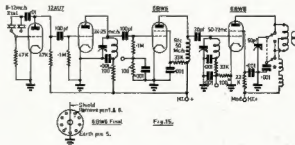
watts output on 2 metres. Incidentally, the writer has had in operation a 2 metre mobile running  $\frac{1}{2}$  watt output and has made several contacts up to 100 miles at good signal strength using a mobile beam which will be described later in this article.

The final tank circuit in Fig. 15 is parallel tuned for 50 Mc. and series tuned for 144 Mc. In mobile operation for easy loading there is a tendency to use pi networks in the final stage. If properly designed good results can be obtained from a pi network with the added benefit of a possible reduction in harmonics radiated. The Q of the tank circuit should be at least 12 and values of components for various frequencies can be obtained from the A.R.R.L. Handbook.



When tuning your final it will be found that maximum radiation does not necessarily coincide with the plate current dip, so to achieve maximum results some type of radiation meter is recommended. A simple radiation meter which could be fitted with plug-in coils for each band is illustrated in Fig. 16. Whilst any r.f. transistor will work it is suggested that you use an OC170 or OC171 to achieve maximum sensitivity at v.h.f. frequencies.

(Continued on Page 9)



# THE IMPORTANCE OF ADJACENT CHANNEL SELECTIVITY (I.F. FILTERS)

E. C. HULME,\* VK2EN

ON today's crowded Amateur Service frequency bands it is essential that a communications receiver be able to discriminate between adjacent signals. Various means of achieving the required selectivity have been proposed and this article will review some of the systems used.

Today the trend seems to be towards an r.f. input stage designed to provide sufficient gain to over-ride the noise generated by the first detector, with a high selectivity channel following the first detector. It is desirable that such a selective channel be placed as close as possible to the aerial in order to minimise the effects of cross modulation.

Means of defining adjacent channel selectivity in a receiver are varied but the system of quoting the response at the  $-4$  db. and  $-60$  db. points on the selectivity curve has much to commend it. The ratio of the selectivity at these points is termed the shape factor (s.f.) and in the ideal case has a ratio of one: i.e. a vertical sided response curve.

The first attempts to obtain a good s.f. followed the discovery by Dr. J. Robinson in England of the usefulness of quartz resonators. James Lamb, of the A.R.R.L., then developed the single crystal i.f. filter, a circuit of which is given in Fig. 1.

Regrettably this circuit possessed the poor shape factor shown in Fig. 2.

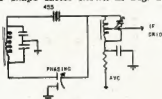


Fig. 1.



Fig. 2.

Over the next decade or so attempts were made to achieve a better shape factor by using a string of i.f.'s con-

● The writer covers the various means of achieving adjacent channel selectivity by showing representative circuits. A more detailed explanation is given in discussing mechanical filters.

nected back to back. This arrangement is shown in Fig. 3 and although it provided a better skirt selectivity, was still far from ideal.

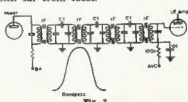


Fig. 3.

With the termination of World War II, a wide variety of surplus equipment became available. Among the various items were large quantities of crystals. Fortunately for Amateurs, many of these crystals had a fundamental resonance in the region of 455 kc., the most common i.f. frequency used in receivers.

The advent of these low priced crystals enabled Amateurs to experiment with multi crystal i.f. filters in an attempt to improve shape factor.

These attempts led, in general, to a series of modifications of the basic Lamb or Robinson filters in which more than one and up to six crystals were used.

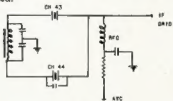


Fig. 4.



Typical of the circuits developed were those shown in Figs. 4, 5, 6 and 7.

From these circuits and their associated shape factors it will be seen that only one (Fig. 7) shows any real promise and six crystals are required.

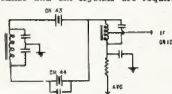


Fig. 5.

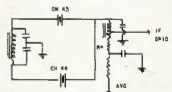
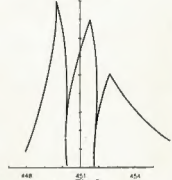
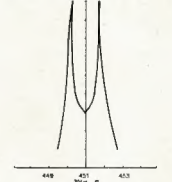


Fig. 6.



During this period of development the use of two crystals, suitably ground and a toroidal coil were proposed. This system exhibited an excellent shape factor and the use of high frequency



crystals (and thus a high frequency i.f.) offered exceptional freedom from image responses. Details are given in Fig. 8.

However, in most of the foregoing circuits, more or less difficulty was experienced in adjusting them correctly and they did not therefore meet with the wide acceptance from the Amateur fraternity that perhaps they deserved.

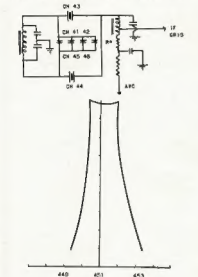


Fig. 7.

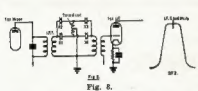


Fig. 8.

While these various attempts to derive ever smaller shape factors were being made, receiver manufacturers were offering double or triple conversion units. This was done on the grounds that multiple conversion gave the advantage of excellent image rejection by the high frequency i.f. channel while selectivity was provided by a low frequency (50-100 kc.) i.f. channel. Fig. 9 gives a schematic of such a system.

It will be seen that the shape factor was still far removed from that required. Strong stations only a few kilocycles away were still able to override a weak DX station tuned in at the selectivity curve.

Progress made until the late 1950s can be summarised thus. Using a number of crystals and/or complex circuitry

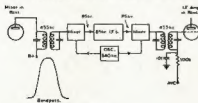


Fig. 9.

it was possible to obtain good shape factors but the critical adjustment required in all cases militated against their wide use in Amateur equipment.

At this stage a solution to the problem of a good shape factor combined with ease of adjustment was provided by the introduction of mechanical filters, a simplified diagram of such a filter being given in Fig. 10.

It can be seen that the mechanical filter comprises four main components: (1) An input transducer (left hand coil of Fig. 10) which converts the electrical input into mechanical oscillations in (2) the rod, so compressing (3) selected metal discs. In turn the oscillation of the discs induces an e.m.f. in (4) the output coil (the right hand coil in Fig. 10). Generally a magnetostriction type transducer is used.

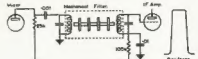


Fig. 10.

A very simple (and thus somewhat inaccurate) analogy to explain the mode of action of a mechanical filter would be a loudspeaker facing a moving coil microphone. Electrical energy fed to the voice coil of the loudspeaker (equivalent to the left hand coil of Fig. 10) causes a piston action of the cone attached to the voice coil. This piston action is transferred to the air column in front of the cone and this air column can be likened to the discs in the mechanical filter. The oscillating air column in turn acts on the cone of the m.c. microphone and in so doing causes its associated coil to move. This movement of the microphone coil is changed (or transduced) into an a.c. e.m.f. In this simplified example we have an electrical-mechanical-mechanical-electrical energy transformation, while in the mechanical filter proper we only have an electrical-mechanical-electrical transfer.

Mechanical filters have very good shape factors. Six disc types are quoted at 2.2, a seven disc type at 1.85, and a nine disc filter at approximately 1.5. Thus it can be seen from Fig. 11 that if a receiver using a mechanical filter is tuned to station X at the -6 db. point, then a station only 500 cycles lower in frequency will be attenuated by (60 - 6) or 54 db.

Mechanical filters are stable in that they are relatively immune to vibration, shock, moisture (they are normally hermetically sealed), atmospheric pressure and most other external conditions. They do, however, possess a negative temperature coefficient ( $-3 \times 10^{-3}$  per  $^{\circ}\text{C}.$ ), but their gain is constant to  $\pm 2$  db. over the temperature range 0 to  $+70^{\circ}\text{C}.$

They are compact and lightweight, taking up a fraction of the space needed by other filters of comparable performance. Due to their construction, no adjustment of the filter is necessary (or desirable) and once wired in require a minimum of external circuit alignment to function well.

The successful application of a mechanical filter is, however, subject to a

few simple precautions which, if followed, will ensure that maximum performance is realised.

Firstly a signal in excess of 10v. r.m.s. should not be applied across the input (i.e. between plate and B+). This point is not normally of importance in receivers where the signal level at the mixer plate is more likely to be in the millivolt range, but attention must be paid to input levels where such filters are used in s.s.b. generators.

Secondly, the filter should be placed directly after the converter (first detector) where the power level is low. Such placement of any selective network is obligatory if freedom from cross modulation is desired and this general rule of the nearer the aerial the better applies to mechanical filters. In some cases (transistor or transceiver duty for example) it can happen that the signal level is too low for optimum operation of a mechanical filter and a stage of i.f. amplification may be needed to rectify the situation.

Thirdly, it should be noted that the mechanical filter has terminal impedances which are low compared with the normal i.f. transformer and the average insertion loss may run at about 20 db. This loss is, however, relatively unimportant, as it can be made up by amplification after the filter. The selectivity of the transformers used in the subsequent amplifier stages will also

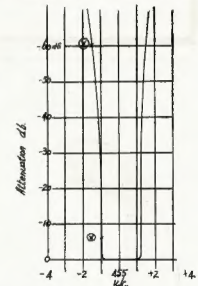


Fig. 11.

help to eliminate any spurious resonances generated by the mechanical filter itself, but broad band i.f. transformers should be used so that no degradation of the selectivity curve of the filter takes place. Low Q i.f.'s are the most suitable.

As a fourth point, it should be noted that short, direct plate and grid leads to mechanical filters are most important. The physical layout should be such that stray coupling round the filter is minimised as stray capacity coupling across the filter will noticeably degrade its selectivity characteristics. A small

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3640 "	4080 "	4330 "	4620 "	4880 "	5205 "	5397.5 "	5687.5 "	5907.5 "	6185 "
3680 "	4095 "	4340 "	4635 "	4930 "	5235 "	5435 "	5730 "	5950 "	6235 "
3720 "	4135 "	4395 "	4695 "	4950 "	5245 "	5437.5 "	5740 "	5955 "	6275 "
3760 "	4165 "	4397.5 "	4710 "	4980 "	5285 "	5485 "	5780 "	5995 "	6315 "
3800 "	4175 "	4445 "	4735 "	4995 "	5295 "	5500 "	5782.5 "	6000 "	6362.5 "
3885 "	4215 "	4490 "	4780 "	5030 "	5327.5 "	5545 "	5815 "	6042.5 "	6375 "
3955 "	4240 "	4495 "	4785 "	5035 "	5335 "	5583.5 "	5820 "		6405 "
3990 "	4255 "	4535 "		5127.5 "		5587.5 "			6450 "

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Sturdily built and beautifully finished. Impedance can be easily stepped down from high (50,000 ohm) to low (60 or 250 ohm) impedance.

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metal shield across the filter terminals normally affords the necessary isolation. Mechanical filters are relatively insensitive to feed and terminating impedances so all external capacitances should be kept small (except where otherwise stated). Normally a total of 15 pF, including inter electrode capacitances, is the maximum.

Finally, it should be noted that a negative voltage must not be impressed on the filter, neither should the positive voltage applied to the input exceed 250 volts.

Having discussed the characteristics of mechanical filters it may be opportune to show how they are included in a receiver and Fig. 12 gives a typical circuit using a two-stage i.f. channel. Normally this provides more than enough amplification and the right hand part of the circuit could be omitted if desired.

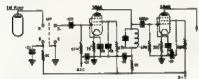


Fig. 12

It will be obvious to sideband devotees that a mechanical filter is an ideal means of generating a good sideband signal. If, in addition, the same filter can be used for both receiving and transmitting functions, the cost would



Fig. 13

be reduced and performance improved. The circuit in Fig. 13 shows how this can be achieved and Fig. 14 gives its pass band. It can be seen that if the carrier frequency (or b.f.o.) is injected at the -20 db. point marked on the curve, then a carrier suppression of 20 db. is achieved before the balanced modulator starts its work.

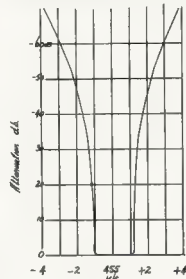


Fig. 14

It is hoped that this article will have been of assistance to readers in reaching a greater understanding of mechanical filters, their ease of adjustment and their general lack of criticality when compared with their crystal counterparts.

## MATTERS—MOBILE

(Continued from Page 5)

It will be noted that very little coil data is given in the circuits; this omission being deliberate. Every Amateur has a junk box with odd size coil formers and should preferably own or be able to borrow a g.d.o. Unless you are fortunate with extension leads, etc., a battery-operated g.d.o. is extremely useful, as you will find when tackling your aerial installation. Fig. 17 is a circuit of a transistorised g.d.o. which is capable of operation up to 150 Mc.

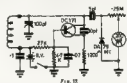


Fig. 17

I hasten to add before finishing this section that if serious work is being considered on 2 metres, not just local contacts, that a separate transmitter for this band be built. Once again back copies of "A.R." are a good source of circuits.

Single and double sideband suppressed carrier mobile equipment has not been covered in this article, but will be experimented with by the author in the next twelve months and may be the basis of a later article.

(To be continued next issue)

## JAMBOREE-ON-THE-AIR

The Fifth Annual Scout Jamboree-on-the-Air will commence on 20th October, 1962, at 1000 hours E.A.S.T. for a duration of 24 hours.

The Boy Scouts' Association, Victorian Branch, is asking Amateurs to participate in this world-wide event by co-operating with their local Scout Groups. This is not a competition; there are no prizes. Any Amateur, with a past or present association with the Scout movement, or who has Scouts in his shack, simply goes on the air any time during the week-end October 20-21 and calls "CQ Jamboree". He will find a great number of local, interstate and overseas stations who are similarly interested.

The Jamboree-on-the-Air has two main objects:

(1) To make the 4th Scout Law Live. This Law says A Scout is a friend to all, a brother to every other Scout, no matter to what country, class, or creed, the other may belong.

The average Scout has few opportunities of meeting Scouts from other countries. Although he cannot shake hands with them during this Jamboree,

he can talk to them. Even if conditions are bad, he will be able to talk to Scouts from other parts of his own country and exchange ideas.

(2) To open new fields of interest. An introduction to Amateur Radio may help a boy discover a latent interest which may lead him to an eventual career in electronics, radio, television, computers, space-travel, etc. It may also encourage him to work on Scout Proficiency Badges related to radio, electricity and signalling.

Any information regarding the event can be obtained from your local Scout Group or from the Victorian Boy Scouts' Association Co-ordinator, Commissioner J. S. B. Y. Woodburn, VK3AGD, Dunkeld, Vic.

## REMEMBRANCE DAY CONTEST

SAT-SUN., AUGUST 18-19

1800 hours to 1750 hours E.A.S.T.

See page 12, July "A.R." for rules.

## W.I.A. D.X.C.C.

Listed below are the highest twelve members in each section. New members and those whose totals have been amended will also be shown.

### PHONE

Call	Scr. Cnt- No. rises	Call	Scr. Cnt- No. rises
VK6RU	3 266	VK6KW	4 308
VK6AE	48 286	VK3ATN	36 384
VK3AHO	51 353	VK6HR	12 182
VK6MK	43 352	VK6RW	23 184
VK4PJ	21 230	VK6SZ	3 176
VK3WL	14 211	VK4WT	18 173

Amendment:  
VK3TG 48 121

### C.W.

Call	Scr. Cnt- No. rises	Call	Scr. Cnt- No. rises
VK6EB	10 300	VK6BZ	8 222
VK6CX	26 288	VK6HR	8 218
VK6RU	29 285	VK6RU	48 215
VK3NC	19 286	VK6LZ	17 212
VK6PH	13 286	VK3YL	39 211
VK6RU	18 285	VK6RX	33 210

Amendment:  
VK3ARX 66 181  
VK3AFK 70 180  
VK3AX 66 131

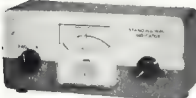
### OPEN

Call	Scr. Cnt- No. rises	Call	Scr. Cnt- No. rises
VK2AGX	6 300	VK2AGH	63 283
VK6RU	8 278	VK6HR	3 246
VK4PJ	32 275	VK6HR	7 233
VK6MG	77 280	VK6BZ	4 231
VK6MK	74 256	VK3JA	41 229
VK3AHO	78 256	VK3WL	48 225

Amendment:  
VK3APK 82 172  
New Member:  
VK3QP 85 119

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## ERECTION OF AMATEUR TOWERS

Recently Mr. A. Chandler (VK3JLC) was refused permission by the Malvern City Council to erect an Amateur Radio tower upon his property. The matter was referred to the Victorian Council of the W.I.A. who agreed that in view of the importance of the matter, they would apply for a hearing before the Building Referees. (The latter body sits to hear an appeal against Council rulings given under the Uniform Building Regulations.)

The W.I.A., Victorian Council, decided that they would bear the legal costs involved, as, if the Malvern Council ruling was allowed to stand, then other Amateurs throughout Melbourne, and other cities, could be similarly penalised.

On 21st June, 1962, the hearing was heard before the Building Referees, and the following are the relevant details quoted from this hearing:

The W.I.A. solicitor stated "This appeal is of some significance to a number of Amateurs . . . It is submitted that this particular aerial tower is perfectly sound structurally . . . Mr. Chandler has been given no indication officially as to why this application has been rejected. He has been told . . . the reason was because of the appearance of the tower."

The Malvern City Council representative then stated: "The Council felt that the height of the tower would affect the appearance of the locality."

Discussion then followed this point and it was agreed that the proposed tower was structurally sound and that other towers had been erected within the similar area.

The W.I.A. solicitor then proceeded to demonstrate that under the Uniform Building Regulations, the aesthetic appearance was not well founded as a ground for rejection, therefore the Building Referees were requested to rule upon the structural capability of the tower, and if they agreed that it was sound, then they should allow the appeal. The attitude adopted by the R.S.G.B. was quoted and the Building Referees stated, "... don't think we can go any further. In due course you will be advised of the decision."

On 25th June, 1962, the W.I.A. was advised that the appeal had been upheld, thus the way was clear for the tower to be erected.

This appeal has established a precedent in so far that the W.I.A. have acted as a body and have assisted an Amateur to overcome a problem. Normally such a task would be beyond the normal individual. As the appeal was upheld, it could act as a precedent for other cases, thus if any Amateur is faced with a similar problem, then he or his advisers, can benefit by the case that has been described. It must be remembered, however, that in this particular instance, the tower was structurally sound, any rejection upon the grounds of insufficient strength in the tower would be a different story.

Thus once again the W.I.A. has rendered the Amateur a service. If any Victorian Amateur is faced with a similar problem regarding the refusal of permission to erect an aerial tower, he is requested to contact the Victorian Division Council of the W.I.A.

## AWARDS AND CERTIFICATES

By John Velma, OB2TV

The original meaning of the awards is to give recognition for certain achievement in Amateur Radio operating. So each award has its own rules, indicating the requirements according to which the award will be available to interested Amateurs.

The awards are a splendid aid in order to seek suitable destinations to the Amateur Radio activity, especially on the Amateur bands. Soon everyone would get tired of unsystematic and aimless operation for the sake of making contacts on the bands. If we only operate without any purpose, we soon will find that the most contacts will not give us any satisfaction. So the awards come to help us. They help us to find certain "steps" along which we can improve our operating skill gradually, and get further and further in Amateur Radio. Reaching these destinations, one after one, will give us quite different satisfaction.

The standards of the awards high and esteemed. However, during the last few years there has appeared quite a new kind of trend in Amateur Radio award fields. Certificates have been founded evidently in order to make profit from them. We cannot come to any other conclusion when looking at these certificates issued mainly by individual Amateurs, the requirements of which often are easy, but which regularly are given for plain money. In one case this trend has exploded to a degree which could be called "certificate industry," in a way that one and the same individual in the U.S.A. issues nearly a hundred different certificates, each being granted for one dollar (U.S.) and the requirements of each certificate being of a gross nature. Certificates like these, according to the European understanding of Amateur Radio, are against the original Ham spirit! Such certificates should be avoided in order to stop further spreading of the business trend in pure Amateur Radio.

The International Amateur Radio Union (I.A.R.U.) will be a tremendously valued help to the private Amateur, when he is asked among all the masses of certificates. Today there are over a thousand certificates available in the world, and it is hard to find among them there are both good and poor awards.

Because the popularity of award hunting has increased tremendously during approximately the last five to ten years, it is evident that in order to stop the false trend in this field, serious information and guidance will be necessary, as well in national as in international "frames". Nationally each individual who has ability of healthy consideration has the possibility to lead the trend in certificate operating into right rails. Internationally this task belongs to the national, official Amateur Radio organisations, which must be able to control their individual members who are inclined to the trend against real Ham spirit! If these national organisations are powerless, there is a very great danger that the Ham spirit will lose its pure meaning. The Ham spirit in its pure, original meaning must not be misled.

The Award Hunters' Club, the oldest and original organisation of the certificate and award hunters in the world, officially registered and affiliated with the A.R.R.F. has seriously recommended a very strict consideration to every Amateur when choosing certificates as a destination for the Amateur bands. As well, it is recommended that not too many certificates be issued in the same country. His fact, this is the decision of I.A.R.U. Region 1. Therefore, the certificates issued by the official organisations rather than private individuals, have a Lesser check.

Awards issued by official national Amateur Radio organisations are recommended, among them also the old and esteemed world-wide awards issued by certain Amateurs, the publications in various parts of the world. Certificates which indicate a trend to "business" by means of Amateur Radio should be avoided. These certificates generally are known for their high price and often easy requirements.

Remember, approximately five I.R.C.'s will cover all packing and mailing costs of a certificate, even that may give some minor profit. The certificates are not sold for a cost anything to the applicants, it being only reasonable that the applicant pays the postage.

# VK-ZL OCEANIA DX CONTEST, 1962

NZ.A.R.T. and W.I.A., the National Amateur Associations in New Zealand and Australia, invite world wide participation in this year's VK-ZL Oceania DX Contest.

**Objects.** For the world to contact VK/ZL/Oceania stations and vice versa.

**When?** Phone: 2 hours from 1000 GMT, Saturday, 6th October, to 1000 GMT, Sunday, 7th October. C.w.: 24 hours from 1000 GMT, Saturday, 13th October, to 1000 GMT, Sunday, 14th October.

## RULES

1. There shall be three main sections to the Contest:—

- (a) Transmitting phone
- (b) Transmitting c.w.
- (c) Receiving—phone and c.w."

2. The Contest is open to all licensed Amateur transmitting stations in any part of the world. No prior entry need be made. Mobile Marine or other non land-based stations are not permitted to enter the Contest.

3. All Amateur frequency bands may be used but no cross-band operation is permitted.

4. Phone will be used during the first week-end and c.w. during the second week-end. Stations entering both sections must submit separate logs.

5. Only one contact per band is permitted with any one station for scoring purposes.

6. Only one licensed Amateur is permitted to operate any one station under the owner's call sign. Should two or more operate any particular station, each will be considered a competitor, and must submit a separate log under his own call sign. (Not applicable to overseas stations.)

7. Entrants must operate within the terms of their licences.

8. **Cyphers:** Before points can be claimed for a contact, serial numbers must be exchanged and acknowledged. The serial number of five or six figures will be made up of the RS (telemetry) or RST ((c.w.) report plus three figures which may begin with any number between 001 and 100 for the first contact, and which will increase in value by one for each successive contact, e.g. if the number chosen for the first contact is 053, then the second must be 054, followed by 055, 056, etc. If any contestant reaches 999, he will start again from 001.

9. **Scoring:** (a) For Oceania Stations other than VK/ZL 2 points for each contact on a specific band with VK/ZL stations; 1 point for each contact on a specific band with the rest of the world.

(b) For Rest of the World other than VK/ZL 2 points for each contact on a specific band with VK/ZL stations; 1 point for each contact on a specific band with Oceania stations other than VK/ZL

(c) For VK/ZL Stations 5 points for each contact on a specific band and in

addition, for each new country worked on that band, bonus points on the following scale will be added:

1st contact—50 points	
2nd " 40 "	
3rd " 30 "	
4th " 20 "	
5th " 10 "	

For this purpose the A.R.R.L. countries list will be used with the exception that each call area of W/K, JA, SM, UA will count as "countries" for scoring purposes as indicated above.

## 10. Logs. (i) Overseas Stations:

(a) Logs to show in this order: date, time in GMT, call sign of station contacted, band, serial number sent, serial number received, points. Underline each new VK/ZL call area contacted and use a different log for each band

(b) Summary to show: call sign, name and address (block letters), details of equipment, total score by showing sum of VK/ZL call areas worked on all bands and total points for all bands. Sign a declaration that all rules and regulations were observed.

(ii) VK/ZL Stations: (a) Logs must show in this order: date, time in GMT, call sign of station contacted, band, serial number sent, serial number received, contact points, bonus points. Use a separate log for each band.

(b) Summary to show: name and address in block letters, score for each band by adding contact and bonus points for that band and as well, total score by adding band scores together, details of equipment used and power, declaration that all rules and regulations have been observed.

11. The right is reserved to disqualify any entrant who, during the Contest, has not observed regulations or who has consistently departed from the accepted code of operating ethics.

12. The ruling of N.Z.A.R.T. Executive Council will be final.

13. **Awards.** VK/ZL Stations: The N.Z.A.R.T. will award certificates to the top scorer on each band and the top scorer in each VK/ZL district and silver mounted plaques to the top ZL scorers in both the c.w. and the phone sections.

**Overseas Stations:** Certificates will be awarded to each country (call area in W/K, JA, SM, UA) on the following basis:

- 1 Top scorer using "all bands".
- 2 Top scorers on individual bands.
- 3 To those with minimum contact requirements to be determined by conditions and activity prevailing

14. Entries from VK/ZL stations should be posted direct to N.Z.A.R.T. Contest Manager, 86 Lytton Road, Gisborne, N.Z., to arrive not later than 31st December, 1962

Entries from Overseas Stations should be posted to N.Z.A.R.T., Box 489, Wellington, N.Z., to arrive not later than 19th January, 1963.

## RECEIVING SECTION

1. The rules are the same as for the transmitting section, but it is open to all members of any S.W.I. Society in the world. No transmitting station is permitted to enter this section.

2. The Contest times and logging of stations on each band per week-end are as for the transmitting section.

3. To count for points, logs will take the same form as for the transmitting section as follows: date, time (GMT), call of the station heard, call of the station he is working, RS(T) of the station heard, serial number sent by the station heard, band, points claimed. Scoring is on the same basis as for the transmitting section and the summary sheet should be similarly set out.

4. Overseas stations may log only VK/ZL stations, but VK receiving stations may log overseas stations and ZL stations; while ZL receiving stations may log overseas stations and VK stations.

5. Certificates will be awarded to the top scorer in each VK/ZL call area and in each overseas scoring area.

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THURSDAY, 2nd AUG., 1962

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See page 12, July "A.R." for rules.

## W.I.A. 50 Mc. W.A.S.

Call	Cer. Add. No. Cntr.	Call	Cer. Add. No. Cntr.
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VK4AZ	28 7	VK3GG	19 3
VK4ZHE	28 6	VK3BQ	22 3
VK2WJ	13 4	VK3LZ	24 3
VK3ZFM	22 4	VK3ZHF	25 3
VK3SH	26 4	VK3AD	32 3
VK4PU	30 4	VK3GZ	38 2
VK4HR	4 3	VK3ZT	31 2
VK3PG	5 2	VK3ZAO	32 2
VK3ABC	8 2	VK3ZAQ	36 1

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# YOUTH RADIO CLUBS

KEN MATTEL, VK1KM

**Y**OUTH Radio Clubs are increasing in number. These clubs do a fine social service for adolescents and will give a great boost to Amateur Radio. Some information about their purpose and results should quieten the occasional old-timer (usually not a father!) who rumbles "More QRM" and perhaps bring more VK Amateurs to find a little time to help in this satisfying work.

Briefly, the Youth Radio Club is formed wherever young people can be gathered (or are already in a prepared group) in order to help them make a start in simple radio construction, learn a little theory, and possibly progress to A.O.C.P. It is usually easier to form a club as an off-shoot of some existing organisation—High Schools (and private Church Schools, particularly those with boarders), Police Boys' Clubs, Boy Scouts, Church Clubs, A.T.C., and the like, provide large groups of adolescents at an impressionable age and easily attracted to Radio as a hobby.

The result is firstly a fine piece of social work for anybody who cares about young people and future juvenile delinquency as it might be if this country follows in the foot-steps of others. No one should expect to be a hero saving large numbers from an awful fate, but certainly you might be diverting a few from the anti-social path. Secondly, the young people are getting a fine start for a possible career in some branch of Electronics. Even if this does not turn out to be their eventual career, studying Radio certainly improves their school marks in Maths, and Science. Thirdly, there is a definite boost to Radio as a hobby.

The QRM problem is no worse because Youth Clubs, if they operate a station, are nearly always on the air at uncrowded times such as lunch hours. We should be able to see from the events of the last 14 years that the official mind has little respect for our rights as private citizens or our value to the country; much greater numbers and better public relations are the only way to halt the cutting of our frequencies which is the great cause of QRM. Greatly increased numbers in a few years are only likely from this adolescent age group.

Whether or not they can find the time or inclination to help, the Amateur fraternity should appreciate the value of Youth Clubs and create a situation in which the officers of their organisations can take some steps to help those interested enough to do the work. Our officers themselves are only voluntary workers and cannot be expected to burden themselves with forming the clubs and doing the practical demonstrations, etc., but they can nevertheless give plenty of backing from the Divisions and Branches for those who do the work, even if only to provide gear from Disposals accumulations of semi-rubbish. How fertile is the soil of our executives for the seeds of this idea? The VK2 Division have made a

• Every Amateur should read unless there are others coming this article with the object of determining what he, as an individual, can contribute to the scheme, which has Federal Executive support. It is the young people to whom the future of Amateur Radio must be left, and forward, then our future cannot be accurately foretold.

start by approving, in principle, of the printing of official certificates for a series of five graded awards on lines worked out by Rex Black, VK2YA

There are probably plenty of bright ideas and some are already in operation, but how about these for a start?

- (a) Approaches to the Director of Secondary Education, possibly resulting in official encouragement of Radio Clubs in High Schools and also Summer Schools to coach young Science teachers in running a Radio Club (anything to help over the crisis in Maths, and Science teaching will interest the Dept. of Education).
- (b) Similar approaches to Boy Scouts' Commissioners (at least their certificate for radio could be revised).
- (c) Offers of circuits, simple demonstration material (from Disposals?), wall charts, mounted instructions for the library, etc., to Science Masters of High Schools, even if there cannot be a roster of local Amateurs to look after a High School Club which is always successful if it is handled in a practical way.
- (d) Newspaper appeals for old radios and other gear to be pulled to pieces, the parts to be handed out to interested youngsters.
- (e) A Branch or Division project to make smart and efficient portable gear to be operated at suitable functions such as Boy Scout Fetes, Y.M.C.A. affairs, Hobbies Exhibitions, Education Week, High School Science Exhibitions, Agricultural Shows, Orphanages, etc.
- (f) The boarders' section of a private school is always receptive to Radio and the Headmaster is always grateful for help there.
- (g) Enlightened executives of big radio firms would sponsor a club—Rotary, Apex, Lions, etc., might help.
- (h) Formation of a class or hobbies group in an Evening College will get the instructor a few pounds a night for his trouble.

There are obvious advantages in a unified VK approach. Does Federal Executive agree about the need for such an approach, and can it find the time (voluntary!) to make it an all-VK effort?

Here in Canberra, so far, youth groups have about 60 young people interested generally in radio construction. There are four groups formed: Lyneham High, Canberra High, Police Boys', and Canberra Radio Society. In groups like this, there is generally a hard core of about one-third who will do a lot of radio and probably the majority of them will become Amateurs. About another one-third will play around with simple work but there is no way of telling how far they will go, nevertheless they have some interest in a challenging hobby and that will do a lot of good. (Note the opinion of any Policeman-Amateur like Wal Salmon, VK2SA.) The remainder are interested to watch demonstrations and will try a simple set or two, but need more time in coaxing them than most of us can manage.

Old b.c. sets are obtained from radio repair shops and by public appeal. These are stripped, the parts given free to constructors and names written down so that parts can be recalled if not used. A set of 22 stencilled sheets is available for distribution, ranging from "Crystal Set" to "Colour Code and Valve Sock-ets", details of Awards by W.I.A. (VK2 Division), circuits for sets using one or two valves or transistors, Morse Code and Oscillator, A.C. Power Supplies, Midget Amplifier, etc. (Copies available if anyone interested.)

VK1LS at Lyneham High transmits during lunch times and after school, and another station may operate from the Police Boys' Club later in the year. On Friday nights at the Canberra Radio Society, steady progress is made through the W.I.A. (VK2) Correspondence Course (but the work is not allowed to interfere with High School home work). Canberra is not the most active centre; the details are given here to suggest a line of action for others interested.

Most countries similar to ours in social standards have been shocked in recent years by the increase in serious crimes committed by some adolescents. It is quite likely that this wave of anti-social behaviour is coming our way. Its severity in this country cannot be predicted but some work now on preventive measures would certainly soften the impact. Nobody knows the full answer but a challenging interest like Amateur Radio is certainly part of that answer.

Any work you do on Youth Radio Clubs can only be good for Youth and Amateur Radio.

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# Correspondence

Any opinion expressed under this heading is the individual opinion of the writer, and does not necessarily coincide with that of the publishers.

## BAND CUTS

Editor "A.R.," Dear Sir,

I have read with interest the many letters, etc., which have appeared in "A.R." of recent months on our band cuts and alterations.

I can fully see the implications of the allocations of Channel Zero for t.v. as most Amateurs do. I work in an area where t.v. is received passably well from Adelaide. On many occasions Melbourne t.v. on Channel 2 causes considerable trouble, completely disrupting the picture and sound at times. This is always been a common occurrence with Queensland and Victoria on Channel 8, plus at times a few JAs, Ws, etc., on about 50 Mc.

Why should we worry if trouble is experienced by tv viewers, it's not our fault?

Why is everyone moaning about adjacent channel interference on the 33-54 Mc band? Why do Amateurs always operate from the lower end of the band? Why not instead of getting crystals ground for 821 Mc, get them ground for 538 Mc? Surely there is sense in this, and we would be able to get 15 Mc away from the tv channel, and not a few tens of kilocycles away if the usual Amateur practice is followed. Think about it. Perhaps it may save a bit of t.v. and vice versa. Don't get me wrong however I am not in favour of the 6 metre band cut.

A piece in the July issue from the Queensland Division regarding the use of portion of the 10 metre band for Z call licenses. I have always been in favour of this and would like to see it carried out.

—Rodney D. Champness, VK3CZD

Editor "A.R.," Dear Sir,

Somewhere along the line we seem to have our values mixed. I have heard operators on various bands, and myself, who are unable to retain what is left of our frequencies. Should we not organize a national day of silence for a month for the purpose of testing how much of the 40 mc band is left? Odd spots between commercials is all I can find.

What are the weird and wonderful noises sometimes across the 10 metre band? Look at our 80 metre band. It is frustrating to hear the ZL boys working up to 2.9 Mc, and we are told that the 10 metre band is not to be used. If this section is required in VK, why not in ZL?

Try this experiment. Listen closely for a couple of hours to from 3 to 30 Mega., on a good communications receiver. Some sections appear to have nothing, and are dead compared with the 1000 band. I am apprehensive for the future. In a world of electronics what will youth have to look forward to for a hobby? I can't win it. It will be a terrible situation, or under any delusion. We are on our way to extinction if something is not done.

May I make a suggestion to the powers that be.

We hope that there will never be another major conflict, but if there is, science will win, and they will not be time to train anyone. So encourage the study of the sciences, particularly where people do it voluntarily, so their skills at least are not lost.

Give it serious thought.

—M. W. Ives, VK7MX

Editor "A.R.," Dear Sir,

I have just read VK3ZRL's letter in July "A.R." on Channel 0 and I wish to add a few comments of my own.

It seems to me that not much can be done to alter the allocation and/or use of this channel. It is more important to consider the effect of the Amateur on this channel and the interference it causes. In the U.S.A. when Channel 1 was in use a similar state of affairs existed in the location of the 30 Mc band as does our 33-54 allocation.

A section of the band should be concentrated in the high end of the band (33.5-54) in those areas where Channel 0 operates and in the lower end of the band in Channel 1 areas. This will place the Amateur's signal as far away from the tv channel as possible, so reducing the difficulty of using traps to prevent adjacent channel interference.

Another factor is the usefulness of the type of trap at present in use. Most of these do not have sufficient Q to remove interference

without removing a large slice of the tv signal. However, more elaborate devices should be able to handle such conditions adequately. As an example, I use a low pass filter in the tv output which has no significant attenuation past 30 Mc while having attenuation of better than 30 db at 58 Mc. Something along these lines may prove effective.

Rather than constantly use our hard-ware allocation at this frequency, I feel we should persevere with its use and hope that measures such as those suggested prove effective.

Peter A. Lowe, VK3ZDO

## REPLIES

Editor "A.R.," Dear Sir,

With reference to the article, "Splatter—Its Cause and Prevention" ("A.R.," July 1981), I would like to state that the points mentioned, and its cure, were treated in "A.M. Without Splatter," which appeared in "A.R." for February 1981. The enhancement of certain frequencies in the O/C modulation transformer transients by the leakage inductance and distributed capacity was not considered in the earlier article but the basic cause of the splatter discussed, and its cure, are nevertheless the same. However, this is by the way.

My real reason for putting pen to paper is to criticize the last two paragraphs of the article. The attempt to give criticism, justified or otherwise, by quoting famous personages out of context and calling such criticism, if forcible, "unbecoming correspondence" is, to say the least, unethical. It smacks, in service parlance, of "pulling one's rank" in this case educational rather than military. It is wholly at variance with the scientific spirit, one of the underlying principles of Amateur Radio.

If Joe Blow, from practical experience, thinks that an article published by a professor of electrical engineering is rubbish, he has every right to say so, provided that, in his opinion, the article is rubbish. He is not on the grounds, and that he does not descend to personalities. One of the finest things about Amateur Radio is that it gives each and every one of us an opportunity for constructive discussion without having to break down the social and educational barriers imposed by society. The article by Joe Blow is wrong, then none should dismiss his considered opinions as "hysterical," but try to point out why he is wrong. If he is wrong, at least he, and possibly quite a few other readers, will have a better understanding of the subject.

Similarly, with reference to some recent correspondence, rather than taking the Magazine Technical Advisory Committee to task for publishing "questionable" articles, one should consider their unenviable position as regards publishable material. There is always a dearth of good, down-to-earth articles which will appeal to the general reader. The IY ray on the technical editor's desk is always full to overflowing, I think we can all be sure that questionable articles will be in the minority. I say questionable rather than controversial, since controversy can be a stimulant to progress. An occasional controversial article is all to the good, even if it is a little harsh, which many are fought within the bounds of that part of our code which states:

"The Amateur is Gentlemanly."

—Roper, VK3PU

P.S. The shunt diode has long been recognized as a good limiter, and will certainly reduce substantially the splatter due to negative peak over-modulation, but it does not remove it, but it is my humble and considered hysterical opinion that there will be even less splatter from rigs employing such limiters if the shunt diode is followed by a high-pass, low-pass filter, since even hard diodes generate switching transients.

The Publications Committee would welcome an overwriting IY ray of Technical articles, as at present "A.R." has only two articles available for publication. Every Amateur station would be able to add to the form frequency admissible range limits, and the frequencies add little to the intelligence but create heavy modulation; the higher frequencies in the audio range add little to the intelligibility but do greatly increase the sidebands radiated. Thus irrespective of the pros and cons, n.c.l., a low-pass filter increases the effective modulation and the audio response time decreases the sidebands. The most effective audio range, for speech, is from approximately 300 c.p.s. to 2.5 kc.—Editor

## APPRECIATION

Editor "A.R.," Dear Sir,

Unlike most of the letters which have been published in "A.R." in recent years, this one is intended to be one of appreciation.

I wish to thank all those associated with the production of this magazine for their efforts in bringing out our own magazine each month.

Suggestions have been made at times to limit the output, which is no significant afterthought. I am sure this would be a backward step I believe.

One feature which I would like to see revived is that giving brief reviews of "QRT," "Breakers," "The Short Wave," "Short Wave Magazine," and "CQ" etc.

Few of us receive all of these magazines each month, and even if a however small percentage of something of interest to us most of us could do something about seeing a copy in a library. Perhaps others would care to comment on this matter.

In general, I enjoy reading "A.R." The July issue, particularly, catered for a wide variety of interests. I am sure that you will be pleased. Please accept my thanks for what must be at times a frustrating task.

—Max Ryle, VK3ARZ

P.S.—I used a copy of "A.R." for January 1981 to complete my bound volumes "50-52." If any reader could assist me in obtaining this issue, I would be very grateful.

## VENTAGE HOME-MADE COMPONENTS

Editor "A.R.," Dear Sir,

I was very interested to see the photo of Mr. J. H. Hoadley's "Ventage" receiver published on the cover of the July "A.R." I am wondering if it is still intact as it should be a valuable museum piece and an example of ingenuity in the early radio days. It is a photo was taken only recently.—Ed.) I recall the filament rheostats were something more than I attempted. The question "How many Amateurs today could build their own vacuum condensers?" prompts me to write.

I have an old home-assembled tuning condenser made in 1923. I purchased two types of plates with the spacing wires, made the spindle, three clamping bolts and the ebonite end plate for a 5,000 pF tuning condenser. My first experience on the short waves, then around the 300 metre band I made a low-loss set as they were termed, long ebonite handles were used, the plates were held in place by coil tuner, the serial and reaction coils were moveable and every precaution had to be taken to make the set leakage proof and avoid body capacity.

The tuning condenser for this set was made from tin foil glued to three ply, each about 2 x 8 inches, with one hinged at the bottom and moved in towards the other by means of a long ebonite handle. The valve was an Edison A700. The tuning coil was about 60 in. very long as I overheat the filament and it went west. The B battery was composed of a number of flat 1 1/2 volt torch batteries, soldered together for higher tension. Edison earphones were used. I still have two Philips A210 diode emitter and one Oram 25 valve tuned circuit. The serial was about 60 in. long with 5 ft. spreaders and about 30 ft. high. The next was a four-valve t.r.f. using three A210 same valve in each stage, with 50 volt heater tension. Helmholtz coils were used. 65 volt batteries. This set gave excellent reception, the r.f. stage helped considerably and the audio stage gave good loudspeaker volume, for those days.

There must still be a few very old parts about, home-made tuned condensers, grid leaks, and other things, but they are scarce. Pentodes not listed for many years, and other parts which although very crude in construction gave results on the very low power used in those days.

If my few relics are of any use to the Institute, I will willingly send them in so that a range of old parts may be kept for posterity.

—Harry Major, WIA-13102.



## WORLD CALL SIGNS

The Federal Treasurer, W.I.A., again has for sale recent back numbers of "Call Book Magazine." Some copies list American Amateurs and others list the way we best for posterity. These are a gift at £1 (either edition, post paid). Apply to the Federal Treasurer, W.I.A. Bob Bosse VK3NT, 30 Cardigan St., Carlton, Vic.

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0.1 $\mu F$ , 9/- doz.	0.12 $\mu F$ , 15/- doz.
0.47 $\mu F$ , 17/- doz.	1,000 Volt
0.0015 $\mu F$ , 8/- doz.	0.056 $\mu F$ , 25/- doz.
0.012 $\mu F$ , 8/6 doz.	0.1 $\mu F$ , 28/- doz.
0.047 $\mu F$ , 9/- doz.	1,600 Volt
0.15 $\mu F$ , 14/- doz.	0.001 $\mu F$ , 22/6 doz.
0.47 $\mu F$ , 26/- doz.	0.0022 $\mu F$ , 22/6 doz.
600 Volt	0.0047 $\mu F$ , 22/6 doz.
0.001 $\mu F$ , 8/- doz.	0.01 $\mu F$ , 24/- doz.
0.0012 $\mu F$ , 8/- doz.	0.022 $\mu F$ , 27/- doz.
0.022 $\mu F$ , 9/8 doz.	0.047 $\mu F$ , 29/6 doz.
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Sub Editor: BUD POUNSETT, VK2AQJ.

5 Alice Street, Queanbeyan, N.S.W

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## AUTOMATIC LOAD CONTROL

As mentioned in last month's notes, a.k.c., it is well worth the trouble of installing the few components necessary in your transmitter. The fewer the components involved, the more attractive this becomes. This circuit has been installed in my own transmitter and I now find that once adjusted, I do not need to keep an eye on the oscilloscope. With the gain of the transmitter automatically controlled, there can never ever be any flat-topping.

The circuit is straight forward and requires little explanation. You will soon get the feel of the thing and you will find that the setting of the 30,000 ohm potentiometer can be done easily by trial and error. Your 'scope pattern will show you the correct setting.

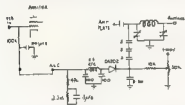


Fig 1—Automatic Load Control

This potentiometer sets the delay voltage and can be connected to the divider network which gives delay to the a.v.c. in your receiver. The semi-conductor rectifier used is a silicon type which has a very high back resistance and is to be preferred to a germanium unit. The time constant is set by the 0.1  $\mu$ F. capacitor and the 0.47 and 33 megohm resistors. The 0.47 megohm resistor and 0.1  $\mu$ F. capacitor determining the attack time and the 33 megohm resistor determining the decay time. Any by-passes on the a.l.c. line should be kept to a minimum as this will affect the attack time.

The amplifier that is controlled must have a variable gain characteristic and a type 6BA6 tube is used in my exciter immediately following the mechanical filter. A meter in the cathode circuit of the 6BA6 tube will indicate when compression is occurring and will also give a relative indication of the degree of compression.

It is my opinion that a.l.c. is essential in every a.s.b. transmitter. Have you ever been accused of over-driving your snail? You have! You need a.l.c., OM.

## A FINAL FINAL ON THE VICEROY

Geoff SAC has been further experimenting with his KW Viceroy tx and sent along these further comments.

"I have now used a simplified method of tuning up the i.f.'s in the Viceroy. The method is to inject audio frequencies instead of r.f. for lining up these circuits. I find that the method is more accurate. It eliminates the need for a source of r.f. signal and an external v.l.v.m.

'Simply inject 350 c.p.a. into the microphone input and turn up the gain until grid current begins to flow. The 6146s will then oscillate at 514kc. Then peak up the primary and second windings of IF1. Now inject 600 cycles and peak up the primary of IF2. Change the audio frequency input to 1000 cycles and peak up the primary of IF3 and the primary and secondaries of IF3 and IF4 on this frequency. The peaking up is observed on the panel meter switched to the grid current position. It will be necessary to readjust the IF transformer coupling to fully drive the 6146s after the peaking up process has been carried out. This is all to the good since it means that the 435 kc amplifier, the 2700, will be operating well below its design capacity. If conditions splatter will be created in this stage.

"Finally a word on c.w. With the Viceroy full break-in is, of course, possible. However, in the Mark 2 bc, the keying circuit operates in such a manner that the relay will drop out when the relay will drop out too quickly when adjusted to the optimum speed for voice. The solution to this problem is to obtain a monitoring signal on a speaker and place the keying circuit in the speaker's feedback control on the tx should, of course, be turned right off. While the key is pressed down, transmission will be continuous, but the relay will drop out when the key is lifted. The result of this procedure is to eliminate the need for re-adjustment of the Vox relay potentiometer controls when switching from a.s.h. to c.w."

## 100 METRES

This is in the nature of a plea. Have you been active on 3.8 Mc. yet using s.s.b.? If the answer is yes, please let me have the details of how you produced this signal and what you are using as an antenna. Your results on this new band will be of great interest also. Write me or look for me below 3.7 Mc. most evenings.

## 20 METRES

With band conditions on 7 Mc. very erratic of late, why not make more use of 80 metres during the day? Some of the chaps are already doing this and are enjoying pleasant QRM-free contacts. 80 metres is used extensively in the U.S.A. during the day over paths as long as 500 miles or so. Make a habit of listening on 80 during daylight hours, you will be surprised.

## ERRATA

Some errors have been noticed in recent information on the Viceroy modifications. An obvious one, "a.c. mains" should read "a.c. mains", in the paragraph dealing with reducing low frequency response, the capacitor should be 150 pF, and not 1,500. In reducing high frequency response of wide range microphones, the capacitor should be 500 pF, not 5,000. IAC and myself send apologies if this has caused you any inconvenience.



## VHF NOTES

(Continued from Page 17)

50 Mc. No DX has been worked to date in the current season, but 7EAV has heard 82MK at 5/8 plus. Teleprinter and commercial hash has also been heard. Bryan 7ZBE now has a TBY transceiver fired up on 8 mx, it should be a good little rig when some mods. are completed. Charlie 7KS is testing a 6 mx converter and it is hoped that a tx for this band will be placed on the project list.

144 Mc., a new station on this band is Danny 2ZDM, who is using a converted 828 on 144.7. Phil 7ZBA/M has returned after a six and a half thousand mile trip to VK6—he worked a good many 2 mx stations on his way through VK3 and VK1 and received consistently good reports. David 7ZAY is in the process of firing up a QQ600/40 linear after his 822, running 80w—it will be interesting to hear the result.

A word for "The Voice". Keep off 3 max  
mate, some people can hear you. 72, 72EE.

## FORT MOLEMBY

The main item of interest during June was the successful launching of Oscar II. 923V and 94U were the only stations equipped to receive the signals from Oscar, and altogether only 14 stations were observed and recorded. It was found that only the pass nearest to overhead was audible in Port Moresby. All information obtained here has now been airmailed to America. At one stage or another of the reception of Oscar, both participating stations had four SCW4s in cascade ahead of their 2 MX converters.

Only other 2 mhz news of interest came from 9CK who on 2nd June placed a carrier on the band. He is now building a modulator to assist the carrier and a converter. 9CK has an almost completed rig for the band with an 832A final and 1AU is the proud possessor of an American mobile tx with an 829B final, which, coupled to an a.c. power supply and modulator, went on the air on 2nd June.

On 50 Mc activity was low and the only DX heard was at 2110 on 31st June when 9AU heard two JA stations. 40 Mc, TE scatter was heard on a number of occasions.

The 52 Mc band was christened with a contact on 2nd June. Xtal freq. for any who may be interested are 9238.5, 9380, 9425 Mc. If anyone is interested in running this either 82 or 44 Mc drop us line C23, P.O. Box 216, Port Moresby, and we will be pleased to arrange them. 73, 9AU

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**Sub Editor: ALAN SHAWSMITH, VK4SS,** (Phone 4 6358-7 a.m.-4 p.m.)  
**35 Whyot St, West End, Brisbane, Qld**  
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Conditions this past month have been down, but during the winter this is the usual occurrence. It is not until spring that the bands begin to liven up again. Right now the best band and period would be 14 Mc, during the afternoons. After dark this band falls away, leaving little until morning when the band opens to the west, when, firstly, Europe is workable, then the circuit extends into the long path to America, Central America is often audible at this time.

7 Mc is open at night but little of consequence has been heard. Mostly JA and UA. On 21 Mc, we can be worked during the day, but nothing else.

**NOTES, NEWS AND ADDRESSES**

**CRABR**, Portuguese Timor, is on nightly from 1100 hrs. GMT to 1400 hrs. GMT. Call 10 up from his frequency of 14110. He does, however, work stations on and below his freq. Get in the queue. His sig. mostly skip VKA.

**WACUL/KP6**, Christmas Island, QSL manager WBAF. Most afternoons 14 and 7 Mc.

**ACANC** Ners Chakravarti, Indian Mission, C. 1000 hrs. Umal, Tibet, 7 Mc.

**VEIMC**, C/o 280 Harbor Rd., Victoria, B.C., Canada.

**WOMLY** is really using up the new African prefixes. In the last few weeks he has run through T8A, T1S, T7B, T3B and more to come. Best time to work him is around dusk or early morning. He is on from five to ten of 14010. Have no info on his s.b. activities. He is supposed to work also 21 and 7 Mc.

**VKVCU/LH** is on now but for how long is not known. T and 14 Mc. s.b. and w. **FORAN**, no late news on Danny Well, but if you want a QSL send to WBEWS.

**OA4TH** Sporadically on both 7 and 14 Mc. phone. C. w. to around 1030.

**WMPZ**, Wm. China, 21 Free School Rd., Penang, Malaysia.

**HEISM** Sesto-MPO APO 148, San Francisco, California.

**K5FOQ** K88 and one or two others, are active from Pago Pago, s.b. and c.w.

**VRBAJ** is active, 21 to 7 Mc. c.w., around 1400 hrs. GMT, Modar, 21 Free School Rd., Penang, Malaysia.

**TOBAD** is still prominent each afternoon, around 0600 hrs. GMT. He works VE readily. C. w. he is fairly new c.w. w. Please don't QRO.

**FORAA**, a regular on 7010 approx. Good time around 0700 hrs. GMT.

**HLKRC**, **HLKRN**, **HLKRD** and **HLKRN** T3A, 14 Mc. at night, around 1000 hrs. GMT. All c.w. QSL for **HLKRN** is via **KTWID** (1400) Box 27, Modar, 21 Free School Rd., Penang. When conds. are right, he is easily workable around 14010 kc. in the mornings not late.

**APFAN**, **APSPC**, East Pakistan, new country 14 Mc. c.w. nightly, 1000 hrs. GMT.

**FWBHS**, as in the case with most expectations in the past, things have never been exactly to plan, with Bill VK3JHO. It seems he is restricted to operating times dictated by the weather supply available. He never has been so far I have heard no c.w. from Wallis Is.

**HPHIE**, Panama City, QSL via W3CTN.

**VRIM**, QSL via W1GQF.

**CRKPC**, CXCX, HKK, KP4s are still workable on 7 Mc. at night around 1030 hrs. GMT with a little bit of luck.

**ZLJSD** is now on 14 Mc. right now. Week-ends in the early mornings might be the best time.

**VPRAK** During week-ends, around 14010 kc.

**Gus** WABPD Latest reports coming from Gus report indicate that the band from 14000 to 14010 is narrowing experience—sea-sickness amongst the crew members, waves 20-25 ft. high, with 20-45 knot winds. All sailing out of the area. The night breakers sometimes came over the boat, everybody was wet most of the trip, radio gear wet—long periods of drying out. There will never be another Ham! A landing on the air from Aldabra, no fellows needing it had better get it this second time. Call this time will be QRA.

**VRBAJ** Aldabra, a regular on 7 Mc. to be used by Gus for general operations are:

C.w. 3535, 3543, 7001, 14035, 14065, 21035, 21065, 21095, 21125, 21155, 21185, 21215, 21245, 21275, 21305. Please, only two QSOs per node, per band.

**Debonney** 35NR3RD plans an expedition to TY in Sept. or Oct. on 20 mc c.w.

The following is supplied by Bev Cavender. **W4CKB**, of the Florida DX Report Qatar. John Garrett will be on Qatar for three to four months along in June. C.w. 14075 to 14080. S.b. on 14120, listening 14230, daily QSL, via Ray Geophysics Ltd., 2-567, C/o Q.P.C., Union Bank Bldg., Persian Gulf.

Campbell is. **ZLJAF** is now active again s.b. around 0330-0500.

Marion is Sorry to say that things do not look very good for the activity from Marion Is. As best as we can determine, there is no a.c. power on the island. One of the boys in South Africa is looking into the matter. One of the operators was to be Z5MPC operating s.b. from Z5ZM1 this month.

Corsica Walter D1APP will be operating with KP8DA from Corsica, 9th to 29th July. all bands, all times, 24-hr. service, if necessary.

DX period planned for later this year by the V50K party to go to Kuria Muria, a British-owned island off the East Coast of Oman. It is under political dependence of the Sultan area of the five islands, 35 miles. Islands were acquired by Great Britain from the Sultan of Muscat for use as a cable station. This should show the new DXCC countries. (i.e. ha, what next?—Al.)

A report from the States says that ACANC, ACACB are drafted to active from Lhasa. I think this info will prove to be correct, knowing the political situation there.—Al.)

**ZT2BP** active from Bamako on 14 Mc. c.w. QSL via R.F.F.

**ACTIVITIES**

Chas ZL111 sends in some nice ones received on 14: **ORANA**, **VRBAJ**, **VR5B**, **CRPU**, **G3FLV**, **G5PM**, **G3MVG**, **G5DW**, **G3MNC**, **JA1GC**, **JA1MJ**, **JA1MF**, **KE1L**, **KE1CE**, **XE-CHOP**, **VR1R**, **VR1M**, **VR1N**, **VR1P**, **VR1Q**, **VR1R**, **VR1S**, **VR1T**, **VR1U**, **VR1V**, **VR1W**, **VR1X**, **VR1Y**, **VR1Z**, **VR1A**, **VR1B**, **VR1C**, **VR1D**, **VR1E**, **VR1F**, **VR1G**, **VR1H**, **VR1I**, **VR1J**, **VR1K**, **VR1L**, **VR1M**, **VR1N**, **VR1O**, **VR1P**, **VR1Q**, **VR1R**, **VR1S**, **VR1T**, **VR1U**, **VR1V**, **VR1W**, **VR1X**, **VR1Y**, **VR1Z**, **VR1A**, **VR1B**, **VR1C**, **VR1D**, **VR1E**, **VR1F**, **VR1G**, **VR1H**, **VR1I**, **VR1J**, **VR1K**, **VR1L**, **VR1M**, **VR1N**, **VR1O**, **VR1P**, **VR1Q**, **VR1R**, **VR1S**, **VR1T**, **VR1U**, **VR1V**, **VR1W**, **VR1X**, **VR1Y**, **VR1Z**, **VR1A**, **VR1B**, **VR1C**, **VR1D**, **VR1E**, **VR1F**, **VR1G**, **VR1H**, **VR1I**, **VR1J**, **VR1K**, **VR1L**, 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# FEDERAL AND DIVISIONAL MONTHLY NEWS REPORTS

(SEND CORRESPONDENCE DIRECT TO DIVISIONAL REPORTER NAMED AT PARA END)

## FEDERAL

### NEW CALL SIGNS (APRIL)

- VK— Australian Capital Territory  
 1JK J. A. Koehler, 18 Herbert Cres., Ainslie, Vals.  
 1A1V R. J. Graham, 44 May St., Inverell.  
 2AFO— F. Cox, 1 Janet St., Metherell.  
 2AGA— J. H. Hughes, 179 Tower St., Panama.  
 1ADA— V. R. Pratt, St Andrew's College, New Town.  
 2BIN— R. Bremk, 23 Judge St., Randwick.  
 2CB— R. D. Conway, 30 Lillie Ave., Leeton.  
 2CO— B. J. Hibberd, 31 Makin St., Dee Why.  
 2CT— A. T. Mullen, 127 Lons Ave., Whitebridge.  
 2CX— J. Williams, 40 Station Rd., Alton Park.  
 2CY— P. M. Crane, 74 Hollywood Drive, Lansvale.  
 2ZI— R. L. Lucas, 88 Stanley St., St. Ives.  
 2ZJ— C. Jackson, 22 Innes Rd., Manly Vale.  
 2ZNP— J. Birdall, 33 Calinga Rd., Northbridge.  
 2ZOW— B. T. Hill, 55 Eubang Rd., Roseville.  
 2ZPQ— A. J. Gray, 37 Cuvier St., Kogarah.  
 2ZSD— S. Dubrovich, 21 Grafton St., Eastlake.

### Victoria

- 1BO— S. C. E. Brown, 82 Long Rd., Mt. Helen, via Ballarat.  
 3GI— G. H. Cranby, 101 St. Walker Rd., Mt. Waverley.  
 3HA— R. J. Kennedy, 21 Moore St., Moonee Ponds.  
 3IC— R. R. Wilson, 36 Skene St., Shepparton.  
 3LO— Deo Radio Club, 158 Heidelberg Rd., Northcote.  
 3XY— R. F. Prosser, 83 Brewer Rd., Bentleigh.  
 3AY— J. Voigt, Brighton Ave., Clayton.  
 3AIP— E. P. Coate, 124 Prospect Hill Rd., Canterbury.  
 3AOS— R. A. H. Blake, Telangutuk East, via Horsham.  
 3AXI— H. G. Duggan, Princess Highway, Warrnambool.  
 3ZJL— J. L. Brown, Jr., 5 Yvonne Court, Glen Waverley.  
 3ZNG— A. Boyle, 46 Regent St., Preston.  
 3ZNJ— K. W. Jewel, 1 Armstrong St., Beaumaris.  
 3ZNL— W. A. Whitbourn, 30 The Right, Ivanhoe.  
 3ZNM— M. Torma, 2 Cambridge St., Maitland.  
 3ZNS— L. R. Stronge, 1 Jasper Rd., Bentleigh.

### Queensland

- 4BI— B. J. Davey, "Stargazer", 140 Goodwin St., Currango, Townsville; Postal: No. 10 (MR) Bgdn., R.A.A.F., Townsville.  
 4JN— J. W. Mullins, 31 Fourteenth Ave., Kedron.  
 4BD— W. F. Donovan, 58 Meemar St., Chermisland.  
 4ZDC— A. K. Clarke, 3 Lorne St., Alderley.  
 4ZED— D. H. Gemmel, 87 Elliott St., Hawthorne.  
 4ZMJ— N. D. Jackson, 6 Park St., Coopersoo.  
 4ZWB— J. W. White, 16 Glenloch, "Glenloch", Pirbright, via Dalby.  
 4ZWR— W. K. C. Heblutzel, 12 Spence St., Bundaberg.

### South Australia

- 5IB— H. Dreimann, Bellana St., Salisbury.  
 5ID— A. B. Cleave, Seymour St., Tailem Bend.  
 5JP— R. C. Scott, 33 Stanley St., East Glenelg.  
 5ZEA— A. W. McLaughlin, 84 Windsor Gardens.  
 5UB— E. Garner, 19 Northampton Court, Elizabeth.  
 5WN— N. C. White, 3 Derwent St., Cumberland Park.  
 5ZEG— A. McRae, 24 Henry St., Pt. Pirie.  
 5ZFO— P. J. Gordon, 7 Rawlings Ave., Torrens-ville.  
 5ZEG— R. G. Gully, 10 Mathias Ave., Cabra.  
 5ZGY— G. L. Tully, 28 Lincoln Ave., Warradale Park.  
 5ZIE— R. W. Kilmanski-Petersen, 28 Gertrude St., Glandorp.  
 5ZIK— I. K. Carmichael, Yorketown.  
 Western Australia  
 61K— V. I. G. Rock, 38 Essex St., Wembley.  
 6ND— J. R. Cox, Govett School, Yarrup.  
 6NT— T. S. Long (Portable), 108 Spencer St., Bunbury.  
 6ZDT— J. Stanick, 77 Constance St., Tuart Hill.  
 6ZDU— J. Treanning, 133 Boyce Rd., Tuart Hill.  
 Tasmania  
 7ZEC— E. Cooper, 30 Constance St., Evandale.  
 7ZEE— T. N. G. Fisher, "Wallace", Onland.

## 2ZAG/T—W. J. Emmett, c/o Haig St. Lenah Valley, Northern Territory

82I—J. A. Moran, C/O 2 C.A.R.U. R.A.A.F. Darwin.

### Territories

- 8AT E. J. Roberts, Station 102, Section 41 New Borka, Port Moresby.  
 Postal: C/o Radio Laboratory, Department of Posts and Telegraphs, Port Moresby.  
 8RW—R. A. C. Washington, C/o I.P.S. Station, Cocos Island, Cocos-Keeling Group.

## FEDERAL QSL BUREAU

The Deutscher Amateur Radio Club (D.A.R.C.), the sponsor of the W.A.E. Certificate, invites the Amateurs of the world to participate in the 8th W.A.E. DX Contest, 1968. This contest was usually held in January of each year, but due to the reduced sunspot activity the DX conditions have been so poor during the last W.A.E.D.C., that the 8th W.A.E.D.C. is tentatively put off until August 1968.

The object of this contest is to establish as many contacts as possible between Radio Amateurs residing in Europe and Australia located throughout the remainder of the world. This time the contest will be held on two weekends, one for telephony and one for telephony. C.W.: Sat. 11th August, 0000 GMT to Sun. 13th August, 2400 GMT. P.W.: Sat. 18th August, 0000 GMT to Sun. 19th August, 2400 GMT. The contest area includes all separate contacts and entry may be made in either or both.

The following bands are to be utilized: 3.5, 7, 14, 21, and 28 Mc. A control number consisting of two parts will be exchanged. The first part is a numerical RST or RS report, and the second part contains a three-digit figure representing the number of the QSO starting with 001 and will continue serially when the QSO operators may be contacted on a different band. No confirmed exchange of control numbers will count one point. Corresponding to the W.A.E. Certificate, a confirmed contact established on 3.5 Mc. will count two points. Full details may be had from this Bureau.

Rob Gurr VK8RG (ex VK8RG, VK1RG), will close down in Papua as from early July. Rob expects to resume activity from VK8RG a little later in the year.

PHIP, QSL mailing for the R.E.F., advises that the PC Hams do not QSL. He says it is useless enclosing L.R.C. or money as the result is the same. He himself cannot acquire a PC QSL.

The Okinawa Radio Club advises details of the following awards: Okinawa Award, U.S. Marine Corps Certificate, and Okinawa Cotton Pickers Award. Full details may be had from this Bureau.

Mr. Frank Punch, a radio inspector in Victoria for many years and well known to VK3 members, has, since retiring, journeyed overseas. Frank, writing from Berchiesgaden, Austria, states his having a wonderful time and is in excellent health.

Steve Grimley, well known from VK8VK and VK8VC, is planning to leave Australia to be repatriated to all QSLs received prior to his departure for Boulder Colo., U.S.A., where he will be working at C.R.P. NBS, from August two to October. He expects to return to Australia with the 1968 expedition. He will return to Australia from U.S.A. via K16, J.A. V88 and DJI. While in U.S.A. hopes to be active under a VET licence, portable W8.

Ray Jones, VK8BJ, Manager

## FEDERAL AWARDS

V.F.P.F. No. 22 has been issued to VK7LZ for 144 Mc.  
 W.A.S. 58 Mc. No. 36 has been issued to VK3AA and No. 37 to VK3ZSR with the addition of 144 Mc.  
 D.C.C.: As from 1/7/62 former Trust Territory of Ruanda-Urundi (RU51) has been divided into two new nations Ruanda and Burundi. These will be given new and separate listings for D.C.C. Credit will continue to be given for Ruanda-Urundi confirmations of contacts up to 30/6/62, after which the listing will be under Ruanda and Burundi.  
 Alf Kinsick, VK8KD, Awards Officer

## NEW SOUTH WALES

### HUNTER BRANCH

The June meeting of the Branch was a most successful visit to NBN studios. Thirty-five members, associates and visitors were present a most comprehensive and interesting tour of the studios and equipment by Ken ZKG. A really good feature of the evening was the discussion session which preceded the actual viewing. During this time Ken described the complete organisation and equipment of the station and was able, as very few guides can, to answer all questions asked of him. The party then divided into two groups to be shown round by Ken and Rodney SCS. Members were then fortunate in seeing both film and live presentations and the evening close down as well. In all, thanks to Ken and his staff, a most enjoyable and instructive evening.

Around the Branch this month once again we witness the big winter sleep, or so it seems for activity is at an all time low. The duck-talkers have now firmly established themselves on the Monday night broadcast despite my comment about a.m. telephony in the last issue. Apparently it is some time before we will see a copy this mode of transmission and progress is to be encouraged, but I find it impossible to set the car and walk about the shack, for when I do, something drifts and I'm turning knobs. Strange to say, VVV never moves at this QTH.

Whitebridge, a 3 Mc signal is now radiating to far distant places and the man at the controls is Tony ZCT. I am told that he has had good reports from as far away as Sydney. The 188 is in the air and may actually be in operation by the time these notes appear.

Things must be slack on the DX bands at late late June 2487 has been heard working 80 Mc on several occasions. The signal in this area has to be heard to be believed. If you haven't already begun to slow the coasts out of the mobile or portable gear then a start had better be made. All this is in preparation for the annual dinner and field day which will be held at the usual venue, Blacklocks Park, during the last week-end in September. Watch the Bulletin and listen to 12W for details, but get the gear ready just as the sun goes down. Some 186 Mc gear for the car. It's really easy to get on this band and skip is a thing of the past. The usual car radio can be persuaded to operate on 1800 kc., so what about it you chaps?

As far as fixed station operation goes on the top band, things are at a low ebb in the Hunter Branch. Plenty of VKs are audible and reports are that some have worked all States already. This is using high power no doubt, but low power, a couple of watts will do it, and a piece of wire will get you all the local contacts. Arrange a sked any time, I have a v.f.o.

Bill MAF is reputed to have not had a contact on any band for four months! This is a very bad thing and there is talk of a persuasion party being organised to get him going again. Plenty of VKs are audible and reports are that some have worked all States already. This is using high power no doubt, but low power, a couple of watts will do it, and a piece of wire will get you all the local contacts. Arrange a sked any time, I have a v.f.o.

The thing all the news, it remains only for me to remind you of the next meeting which will be held in the usual place, Newcastle University College, Tynes Hill, on 10th August at 8 p.m. By listening to the Monday night broadcast you will be able to get all the details, but I believe no one will be able to show. Bill MAF will be holding the general social gathering at his well known hospitality on the fourth

## SILENT KEY

It is with deep regret that we record the passing of:—

Ian Ginbey, VK6IG





## UNIVERSAL SOUND



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Output: -54 db. (1 volt p/microbar).

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Wednesday, that's 22nd, and all are invited. And one more reminder, don't forget the field day, 30th Sept., with the dinner on the previous night. See you 73, 2A0C.

#### BLUE MOUNTAINS SECTION

The notes for the last two issues were missing for which I apologise, holders, work and all that. All club meetings have been well attended. Denis 2A7W gave a very interesting lecture on test equipment, and a number of gear to demonstrate. The boys had plenty of questions on "oh" ratings, etc., and our thanks go to Denis.

The last meeting had the pleasure of listening to Sid 2B5's voice on tape, the tape being his transistor converter which included slides and held everybody's interest. Business over the past months has been normal, mostly taken up with club crystals for 3 mhz—no comment.

Yours truly had an enjoyable holiday at South West Rocks, where I was joined by Noel Walker, Jack 2AAT, Stan 2CQ and Roy 2KO, so a good time was had by all. The fish were good also, if you had silver bait. Noel is now planning holidays at the end of the year, so I'm convinced I am working for the wrong firm. Jack 2ADF has finally bought his car, Australia's own, which I am told is a working model and a good one so it should not be long before Jack will be the cause of some mobile QRM. Ken 2AVN is busy on the week-ends these days getting his new QTH under way.

Oscar has caused a lot of interest in the club and about four or five indicate that they have heard him—hi, hi, Denis 2A7W is a few laps of his tracking methods and proved very interesting. Laurie 3CZ has been very active also. Noel has been busy listening out for the Pacific rocket and was disappointed when the last one was a "fizzer". Bob 1CT has been active since he received his licence and has been heard and worked with excellent signal.

A visitor to our last meeting, a newcomer to the district, is Arle Blas, ex PA0FH, ex PK4DH, now living at Springfield and I believe is well up on sideband and has lots of nice equipment.

Coming events to hand: R.D. Contest and Secret Jamboree of the Air, will no doubt receive the excellent support of last year. Don't forget Oscar reports, no matter how late. Next meeting should be interesting—a buy, sell and swap night, all welcome 73, 2ADA.

#### BOORAGUIL HIGH SCHOOL RADIO CLUB

Four of our members have been notified of the success at the recent examination for the elementary certificate. They were Susan Brown, Ray Elkin, Bill Brown and Warwick Elliott. It is hoped that several more members will be on the list after the next exam. Because of his very good mark of 94 per cent, Ray was presented with a multimeter, donated by Mr. Meininger, Mayfield. Thanks to him for such a useful award.

Open day at the school this year will be on 10th August and we hope to be on the air as in previous years. The bands we will be using are 40 and 80 and it is hoped that as many school stations as are able will call in on the net. Please listen for 2ATZ and give a call if you hear us. Among other exhibits we will have a portable station in the field, most probably on the top band, 73, 2ATZ.

### VICTORIA

#### JULY GENERAL MEETING

The July meeting was held at the usual venue on the 4th to a somewhat smaller audience than was expected. Due to the late arrival of the President and Vice-President, the meeting was delayed. By general agreement, business matters were left to our speakers. Mr. Alec Little, proceeded with his talk on the transistorised equipment the University Physics Department use for finding their beam outputs. The tx runs about 100 mW, on 3.601 megs. to a half wave dipole. When they are very lucky the dipole will be caught in a tree. If things go normally the dipole will finish flat along the ground. If their luck is out, the antenna ends up a tangled mess of wire. Even so, recovery rate is highly satisfactory, only one balloon and it has been lost, although the payload was returned to the University. Maybe, like the Southern Cloud, it will turn up in about 20 years.

After the lecture, Mr. Little demonstrated the equipment and surprised everybody with the sharpness of the loop-stick antenna. The receiving set-up comprises the loop-stick feeding an auto-tuned amplifier, incorporating a sense antenna, thence into a commercial dual-wave transactor portable. All in all, a most interesting evening.

Next came business matters. Five new members were gathered to the fold, 3G1 ex-VGC1, 3ZJ1, 3Z1O, 3Z1T as full members, and R. F.

Gerting as an associate. The Secretary reported on the success of Alf Chandler's appeal to the Minister of Education, Mr. G. M. Stewart, to permit the erection of a 47 ft. tower. You will recall the Institute undertook this appeal on Alf's behalf.

There are a number of jobs to be done at the rooms and volunteers are needed, if you have a few hours to spare, please contact either the Secretary or Mrs. Bellamy. W.I.C.E.N. is well under way, 110 cards having been returned. A major exercise is being planned for the 22nd and 23rd Sept. Details will be sent soon to those who returned cards.

Now that 3W1 is back on the air, a broadcast committee, comprising 3OM, 3BX, 3ARZ, 3Z1A, has been formed. Items suitable for the broadcast should be sent to one of these people. 3OM will be found on 80 mhz at 8.20 Friday nights to 9.00 on from country members. 3ARZ will be on the air about 10 a.m. on Sundays, I believe, for last-minute news.

A tape recorder has been purchased for 3W1 and arrangements made for a replay of the broadcast on Sunday evenings for the benefit of those lucky fellows who can stay in bed until lunch time on Sundays.

Slow Morse transmissions are being made on 13.20 p.m. on 30 mhz. I trust 30 Mr. Council desires to publicise all slow Morse transmissions. If you know of any Amateur or commercial transmissions, audible in VK3, please send details of times and frequencies to the Secretary.

#### COUNCIL MEETING

July Council meeting was held on 10th, a very cold night to go out. Amongst the matters discussed was the request that Council support an application for Limited Licences to operate on 29 Mc. After long discussion, Council decided not to support the request. The allocation of Channel 0 was discussed but as P.E. has already got this matter in hand, no action is being taken for the present. The W.I.C.E.N. report submitted to the State Government Council was examined. There will shortly be a conference with the Division's representatives when further details will be ironed out.

The work of operating 3W1 during the broadcast has fallen on too few shoulders. It was decided to roster member of Council to act as engineer. This necessitates running a class after the meeting so everybody concerned would be familiar with switches, buttons, etc.

Federal Councillor tabled a copy of the syllabus prepared by VK3 for Youth Radio Club. Council is taking steps to start a similar movement in VK3. Ways and means of increasing interest in W.I.A. were discussed, but due to the time of the evening a special meeting was called one week hence to discuss this matter alone.

#### GENERAL

Saw an interesting comment in June "A.R." regarding the service on Council in VK3, compared with VK2. Possibly service in VK2 is more rigorous. In VK3 things are fairly easy. Apart from 14 or 15 meetings a year, about 9 or 10 general meetings a year, two or three public week-end meetings, 3W1, printing, compiling notes for the mag., compiling news for the broadcast, acting as engineer for 3W or twice a month, shing furniture, constructing equipment for 3W1, painting, cleaning up premises, etc., etc., etc. VK3 councillors have nothing to do. By the time you get to the P.E. and the various committees (Disposal Committee etc.), the activities of about 30 people are rather restricted. I can sympathise with W.I.A. and express this hope that when he finds a way to organise a tribe of volunteers, he makes his information public.

### W.I.A. N.S.W. DIVISION HUNTER BRANCH ELEVENTH ANNUAL CONVENTION

will be held on

**SATURDAY, 29th SEPT.**

and

**SUNDAY, 30th SEPT., 1962**

Full details in Sept. "A.R."  
and the Bulletin

For advance bookings contact Hon. Sec., G. Sutherland, 13 Marine Vw., Newcastle.

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	Power Output at Full Ratings (W)	Max. Operating Frequency (Mc/s)	Max. Operating Frequency (Mc/s)
QQZ03-10 .. .. .	13	200	225
QQZ03-20 .. .. .	45	200	500
QQZ06-40 .. .. .	85	200	500
QZ06-20 .. .. .	70	60	175



## COMMUNICATIONS

Two new double tetrodes, QQV07-50 and QQV03-25, meet the demand for increased anode dissipation and can be incorporated in equipments requiring output powers of 70 W and 35 W respectively, including equipment designed for the QQV03-20A and QQV06-40A.

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**Mullard**

PROFESSIONAL AND  
INDUSTRIAL VALVE DIVISION





Snowy 7CH is still collecting QSL cards for inclusion on 7W1's card panel. Mine is missing, but I have a card returned in your issue. A few of the old-timers are missing, so if you could help fill in the gaps, your help would be much appreciated.

At the August Divisional meeting, the club-room fund raising committee will be conducting an auction of donated gear. Rummage bags and boxes will be given away. You can for sale to swell the fund for our new club-rooms, every little thing will help. Scrap metal will also help the fund. The fund will be heard in edited tape on v.h.f. communications. Ed WIEDQ, followed by a contribution edited by Reg ZIAG. All members were very much impressed by the most absorbing history. We realise all the more what a great field of endeavour lies awaiting investigation in this frequency region.

There are two projects under consideration at present. One is a fund raising venture for our new clubrooms, which we hope will take place about the end of Sept., taking the form of a convivial get-together with adequate additions to ensure the most pleasant running of the evening. The other project under consideration is a Hamnet about the midpoint from the three centres of Amateur population. You will be hearing more about this project in the months to come. 73, 72Z.

#### NORTH WESTERN ZONE

I have some heartwarming news this time. This has closed the last tin crack in its sealed box and is now 100 per cent. t.v. proof. David goes on the air while the family watch the t.v. Must see David and get some ideas. TXI has inserted 34 kc. into his rx and there are also sidebands left. Mighty selective things. George. Last night our monthly social meeting was held and once again a same old faces again. Take warning slackers, things may be made easier for you shortly—there are no more meetings.

Anyhow, those present had an enjoyable evening, several presenting short informal talks on a variety of subjects, including the G8RV, t.v. proofing, and maths to the tenth power or something.

Sid gave a demonstration with an electronic wheel balancing device. I feel we all finished a bit off balance.

There was some talk of the R.D. Contest and David will probably launch his offensive with a foot pedal and a systemic accelerator. So once again it's coats and slippers off and on with the offensive. He's taking a little break during the contest and what is left of our bands has not been greatly disturbed. We are having great difficulty with the Sunday morning broadcast from Hobart as we were a lot for the 80 mc relay we would be in the dark. Thanks, chaps, and keep on with the good work. 73, 7MX.

#### NORTHERN ZONE

The June meeting of this zone was held at the home of Peter 7PF and judging by the large attendance, our office-bearers will have no short counting if they are not already doing so, the procuring of a hall or large room in which to hold our meetings because if our present rate of growth is main-

tained it will soon be impossible to hold meetings in individual homes, pleasant and successful though this method has been.

Lecturer for the month was Mr. AH Cook, a lecturer at the Launceston Technical College and AH gave a very informative and instructive lecture on the means and methods of judging the performance of a communication receiver.

7PF also brought members up to date on the behaviour of Oscar II.

A tape recording of 12 mystery voices was played and the members who correctly named the most voices. It appears as though 7BQ and 7PF do the most eavesdropping.

On the air activity by some members is very limited. 7EC is active on 7 and 14 Mc. c.w. chasing the elusive DX. 7PF can be heard on 15 Mc. discussing activities. 7BQ is also due to appear on this band shortly, whilst 7LZ is all set up for 1.8 Mc.

Zone activity on the v.h.f. bands is at present practically nil. 7EB is now recovering after a successful operation; glad to see you about again. Ed. 73, 7LZ.

## HAMADS

Minimum 5/-, for thirty words.

Extra words, 2d. each.

Advertisements under this heading will only be accepted from Institute Members who desire to sponsor a v.h.f. station in their own personal property. Copy must be received at P.O. Box 36, East Melbourne, C3, Vic. by 6th of the month, and remittance should accompany the advertisement. Call signs are now permitted in Hamads. Dealers' advertisements not accepted in this column.

**EXCHANGE:** BC342N Receiver in mint condition, modified front end, noise limiter, Q5er output, for V.h.f. Receiver—Hallcrafters 572 or 538 or similar. Cash adjustment if necessary. VK3ZGF. Phone 25-3968 (Vic.).

**FOR SALE:** AR7 Receiver, complete, £25. Hallcrafters SX29A same price, also AT5 and other transmitters and receivers, p.a. equipment, c.r.o. and power supplies. No reasonable offer refused. Must sell. VK2EL, L. West, 38 Fullers Ave., Chatswood, N.S.W.

**FOR SALE:** Cavity Tuned Oscillators, from No. 10 Sets, 3,500 Mc., £2/10/0. Transmitters and Receivers, No. 10 Set, 3,500 Mc., £5 each. 12 volt Vibe. Trans., C.r.o. h.t. Trans., 600-60,000 ohm Line Trans., all 3/- each. C.r.o. Indicator Unit with p/supply, £5. A.W.A. batt. operated Mod. Osc., A8.15, £5/10/0. 100w. Public Address Amp., p/supply, no tubes, £10. 5 metre 4 el. Beams, new, £4. Line Amplifiers, has 6v. vib. p/supply, £1/15/0 each. 700w. audio, 300 Ma. Power Trans., £4; others at lower prices. 1,500w. audio, possibly 1,000 Ma., oil filled, P. Trans., new, £10. Other bits and pieces. Boxes of assorted components, 30/- each (you will need a car). All gear to be disposed of. Shifting QTH and cannot take—make an offer. Will exchange any of above for 2 metre gear or test equipment. Eddy-stone 750 Rx, excellent order, £85. Heath Kit OMI Oscilloscope, new, £23. Able to arrange finance if required. T. E. Straughair, VK3ABV, 185 Stephen St., Yarraville, W13. Note, I am not on telephone.

**FOR SALE:** Gear ex late VK4CU. Command Tx's, modified and good performance. 3- and 7-9 Mc. with plug-in Heising choke modulator and 380v. pack, D104 mA, £16. H1. H. pack, 550v., 250 mA, pair 523s, 6.3v. fil., £5. H.t. pack, 385v. 150 mA, 523, 6.3v. fil., £3. 3-6 Mc. Command Rx, modified 7 Mc., 455 i.f.s., £4. Palec Valve Tester,

Model VCT, Offers? Chassis Punches, 31 15/-, 18" 25/-, BC348, original wiring, inbuilt h.t., £28. A. Marshall, Clifton, Qld. VK4AF.

**FOR SALE:** Transmitter-Receiver R.A. A.F. type ATR2B with a.c. and d.c. power supplies, in perfect working order. This is a going mobile, portable, or base station on 3.5 and 7 Mc. with xtal and v.f.o., £25. Communications Receiver AR7, in excellent condition with a.c. and d.c. power supply, range 140 Kc. to 32 Mc.; this is probably the best AR7 in Victoria, £35. Commercial Public Address Amplifier, with 6L6s in p.p., £7/10/0. Test Equipment: Valve and Circuit Tester, Palec VC2 with attachments for t.v. and miniature tubes, £12. 8" Oscilloscope APW9922, in first class condition (with pwr. supply), £12. Modulated Oscillator: Philips TM101A, 100 Kc. to 25 Mc.; this is a piece of laboratory standard equipment, £17. Modulated Oscillator Palec M101, range 150 Kc. to 30 Mc., £15. Wavemeter, Type W1117, range 125 Kc. to 20 Mc.; this item will meet your most stringent frequency measuring requirements in the shack, includes two sets of spare calibrated valves, £15. Vacuum Tube Voltmeter, Palec Model VTM, with r.f. probe, £12/10/0. Mobile Transmitter (less pwr. supply), A.W.A. Type J3244, (freq. approx. 2 Mc., ant. 80', 8" x 10" coil), this item will suit your needs if you intend going mobile, £7/10/0. Range of modern series tubes, most new and unused, includes two photo electric cells, a parcel of 25 for £4. All equipment is in guaranteed working condition and will form the basis of an excellent test bench for any Ham. I am going overseas late in August and early buyers will not regret an inspection. John Morris, VK3AES, (WF 2090), 302 Riversdale Road, Camberwell, Vic.

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**WANTED:** B.f.o. Coil 85 Kc. from BC 453. J. Tutton, VK3ZC, Phone 81-6131, or 60-1031 (day).

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120 Kc.-390 Mc.  
Freq. range (100  
bands): 120 Kc. to  
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Mod. freq. 400 and  
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Mc. 100, 117 or  
230v. a.c. input, 50-500  
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4 1/2 in. Weight: 6 lb.



Price: LSG11—£16/17/6 inc. tax  
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2A5	7/6			12H6	3/6
2A6	7/6			12J5	5/- 5a
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5V4G	15/-			16Z6	5/- 5a
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I.F. freq. 142.5 Kc. Clean condition.  
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BM3 Insert **10/- each**

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American Bradley, 2" long, 1/2" shaft,  
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50 ohm 25w. wire wound (D129) **5/-**

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